DOCUMENT RESUME

ED 359 206 TM 019 832

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TITLE Approaches to Studying and Preferences for Teaching in Higher Education: Implications for Student Ratings.
PUB DATE Apr 93
NOTE 12p.; Paper presented at the Annual Meeting of the American Educational Research Association (Atlanta, GA, April 12-16, 1993).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Cognitive Style; *College Students; *Course Evaluation; Engineering; Factor Analysis; Foreign Countries; Higher Education; Maximum Likelihood Statistics; *Personality Traits; Psychology; Questionnaires; Student Attitudes; *Student Evaluation of Teacher Performance; Study Skills; Teacher Effectiveness
IDENTIFIERS *Approaches to Studying Inventory; *Preference Data: Scotland

ABSTRACT

Two studies in Scotland used similar questionnaires to examine relationships between approaches to studying and students' preferences for different types of learning environments. The first study also examined the relationship with students' evaluations of their courses, while the second included reasons for choosing that course (educational orientation). In the first study, a questionnaire was designed containing a shortened version of the Approaches to Studying Inventory and administered to 123 first-year engineering students. A similar questionnaire was administered in the second study to 153 first-year psychology students. Maximum likelihood factor analysis explored the dimensions of interest. For failing students there was a substantial incoherence between their approaches to studying and their patterns of preference for different kinds of teaching and courses. Students who adopted deep or surface approaches to studying also preferred methods of teaching and assessing that encouraged their own approaches to learning. Consequently, there were differences in the types of teaching students would rate highly. Students are likely to define good teaching differently based on their approaches to studying. Four tables present study findings. (SLD)

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APPROACHES TO STUDYING AND PREFERENCES FOR TEACHING IN HIGHER EDUCATION: IMPLICATIONS FOR STUDENT RATINGS

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Paper presented at the AERA Annual Meeting, April 1993

TM019832

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Paper presented at the AERA Annual Meeting, Atlanta, April 1993

Approaches to studying and preferences for teaching in higher education: implications for student ratings.

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Introduction

European research on student learning has identified a series of concepts which have proved valuable for describing the experiences and strategies used by students in everyday studying in higher education. These concepts emerged initially through qualitative analyses of interviews but this paper reports research in which the concepts have been operationalised within a questionnaire. The main concepts used in this study were *educational orientation* and *approach to studying,* which have then been examined in relation to students' preferences for different types of teaching, assessment, and courses. Each of the two main concepts contains a series of categories which describe contrasting student responses. Throughout these concepts and categories the idea of intentionality in academic learning runs strongly, and it is coupled with a recognition that intention has to be seen in relation to the social and educational setting within which learning takes place.

Intention can be seen most broadly within the reasons students give for taking a particular course. This has been described as their *educational orientation.* From interviews with students, Taylor (1983) distinguished between three main orientations (*vocational, academic,* and *personal*) - each with a distinctive type of interest in the course (*extrinsic* or *intrinsic*) (see Table 1).

Table 1 Contrasting educational orientations

Vocational	
Extrinsic	Obtaining a qualification of recognised worth
Intrinsic	Effective and relevant training for career
Academic	
Extrinsic	Progressing further up the academic ladder
Intrinsic	Pursuing the subject for its own sake
Personal	
Extrinsic	Compensating for past failures
Intrinsic	Broadening horizons and providing challenges

The different educational orientations describe the aims students report as they embark on higher education courses, and they also help to explain not only the amount of effort they subsequently put into the course, but also the kind of effort, as we shall see. The categories described above are not intended to describe individual students - they are analytic categories. Yet

students do differ markedly in terms of the relative balance of their orientations to a course.

When students are asked to carry out an academic task, like preparing for a tutorial or writing an essay, the way in which they tackle that task might well be expected to depend on this balance between extrinsic and intrinsic interests. In deciding how to tackle that task, students will have contrasting *intentions* and varying *perceptions* of task requirements. And those intentions and perceptions have proved to be closely related both to learning processes and strategies, and to the quality of the learning which takes place (Entwistle & Ramsden,1983; Entwistle,1992).

Research on this topic was carried out initially by Ference Marton and his colleagues in Gothenburg (Marton,1976; Marton & Saljo,1984). The starting point was a 'naturalistic experiment' in which students were asked to read an academic article. Subsequent interviews explored what they had learned, and how they had tackled the task. Analyses of the interview transcripts showed qualitative differences in the levels of understanding reached, which were closely related to the students' intentions in tackling the task they had been set. The intention to understand led to a *deep approach* to learning, while other students intended only to spot facts likely to come up as questions, and then to memorise them - a *surface approach.* Subsequent research has shown that these distinctive approaches occur in everyday studying in relation to a wide range of tasks (Marton, Hounsell & Entwistle, 1984). The characteristics of these contrasting approaches are summarised below in Table 2.

When the research on approaches to learning was extended from a naturalistic experiment to everyday studying, it became clear that the influence of assessment requirements had also to be taken into account in describing how students learn and study. In the everyday context, two additional approaches have been identified (Entwistle & Ramsden,1983) - *strategic* and *apathetic* (initially called a 'non-academic orientation').

Table 2 Defining features of approaches to learning

Surface Approach	
Intention simply to reproduce parts of the content	
Accepting ideas and information passively	
Concentrating only on assessment requirements	*Reproducing*
Not reflecting on purpose or strategies in learning	
Memorising facts and procedures routinely	
Failing to recognise guiding principles or patterns	
Deep Approach	
Intention to understand material for oneself	
Interacting vigorously and critically with content	
Relating ideas to previous knowledge and experience	*Transforming*
Using organising principles to integrate ideas	
Relating evidence to conclusions	
Examining the logic of the argument	

The strategic approach describes well-organised and conscientious study methods linked to achievement motivation, and the determination to do really well in the courses taken, while the apathetic approach in some samples appears as the opposite pole of a bi-polar strategic factor and in others it is more closely associated with the surface approach. Another facet of the strategic approach shows the student relating studying to assessment requirements in a manipulative, even cynical, manner.

Subsequent studies have shown that the approaches to studying used by students are strongly influenced by their perceptions of the learning environment (Meyer & Muller,1990; Entwistle, 1991;1992;1993). This paper reports the results of two studies using similar questionnaires which examine the relationships between approaches to studying and students' preferences for different kinds of learning environment. The first study also examined the relationship with students' evaluations of their main course, while the second included their reasons for choosing that course in the first place (their educational orientation).

First study

Methods of measurement

A questionnaire was designed which contained a shortened version of the *Approaches to Studying Inventory* (Entwistle & Ramsden,1983; Entwistle & Tait, 1993). This inventory gives Likert-scale scores on each of the four approaches to studying described above. The questionnaire also contained items covering the areas commonly included in course evaluation forms completed by students (Entwistle & Tait,1990) and a series of questions about students' preferences for different kinds of learning environment. In particular, these questions tapped preferences for environments which, from previous research would be expected to encourage either deep or surface approaches to studying (Entwistle,1992).

Sample

The questionnaire was given to a sample of 123 first-year electrical engineering during a lecture. End of year examination results were subsequently obtained on that course. The sample could then be subdivided into those who had passed the examination (N = 80) and those who had failed (N= 43).

Results

Maximum likelihood analyses were computed, and rotated pattern matrices were obtained for three factors with delta set at zero. The three factor solution was chosen as the one most equivalent, among the successful students, to previous analyses, although this accounted for only 43.5 % of the variance (50.2 % for failing students). Table 3, below, presents the factor analyses of the two samples. The successful students show the expected pattern of relationships, even more clearly than in the analysis of the whole sample (Entwistle & Tait,1990). The first factor links meaning orientation with those features of an academic environment expected to facilitate a deep approach to learning, while the second factor links the reproducing orientation with surface features. The third factor relates the achieving orientation to positive evaluations of lectures.

Among the failing students, however, the expected pattern does not materialise, with the exception of the evaluation factor. The first two factors represent bizarre and uninterpretable combinations of loadings. The first factor is particularly strange as it is defined in terms of high positive loadings on all four of the orientations, in spite of the fact that two are essentially the converse of the others. The second factor makes more sense in relation to the orientations, showing reproducing associated negatively with meaning, but that is then linked to both deep and surface preferences for lectures and examinations.

Table 3 Factor analyses of approaches, evaluations and preferences for successful and unsuccessful students

	Successful Students			Unsuccessful Students		
	I	II	III	I	II	III
Approaches to studying						
Deep	49			69	-44	-28
Surface		66		75	44	
Strategic			35	48		-56
Apathetic		59		57		63
Evaluations						
Good level, well organised			69			-71
Pace too fast, heavy workload		41	-27			
Good explanations, enthusiastic			88			-56
Books available, handouts good						-56
Staff approachable, provide advice						-27
Preferences for learning environments						
Deep approach encouraged by						
- lectures which challenge	52				40	
- open questions in exams	45	-31		57	30	
- discussions in tutorials	69			33	39	-33
- courses which allow choice	29		36	53		
Surface approach encouraged by						
- lectures which give good notes		37			46	-27
- exams linked to lectures		54			40	
- tutorials reinforcing lectures		41		43		
- courses with defined reading		64			65	

In earlier analyses of similar data, Meyer & Muller (1990) found that 'disintegration' took place in failing students' perceptions of the learning environment. This took the form of unexpected and uninterpretable linkages between approaches to learning and perceptions of the learning environment. If such an effect also existed in the present data set, within factor analysis it would appear as atypical patterns of loadings. The first two factors in Table 3 relating to the unsuccessful students contain loadings which can be interpreted in that way

Of course, it may be objected that the samples used in these analyses were too small to apply factor analysis successfully. The factor loadings obtained are admittedly unstable. However, the successful students show exactly the same pattern as in two previous complete samples, while the total absence of an interpretable pattern in two of the factors from the failing students is unlikely to be simply a chance variant.

Second study

Methods of measurement

A questionnaire very similar to the previous one was used, except that no evaluations items were included and the tutorial preferences were also removed. Additional items relating to orientations to education were added which gave scores on intrinsic and extrinsic interests in the course chosen and also an additional item which indicated that the student had rather drifted into higher education without any clear reason.

Sample

The questionnaire was given to a sample of 153 first-year psychology students during a lecture.

Results

A maximum likelihood factor analysis was again used to explore the patterns of relationship between the scores on the dimensions covered by the inventory and the additional items. The most interpretable solution involved the extraction of four factors which explained 50.0% of the variance. After oblique rotation, the factor structure produced the loadings shown in Table 4 above. (Intercorrelations between factors were all less than 0.2).

The patterns establish very clearly the connections between approaches to learning and, on the one hand, intrinsic orientations to education and, on the other, preferences for differing learning environments. Students indicating that they were adopting a deep approach without associated strategic study practices (Factor III) had entered higher education with intrinsic orientations, had positive attitudes, and preferred teaching which challenged them to develop their own ideas independently. In contrast, students who had a surface approach to learning (Factor II), showed associated fear of failure and an apathetic approach. They again indicated that there was a clear association between the surface approach and preferences for learning environments which support rote learning with minimum of effort.

Table 4 Factor structure matrix for orientations to education, approaches to learning, and preferences for contrasting learning environments

Inventory Scale	*Factor*	*Factor Loadings* *I*	*II*	*III*	*IV*
Orientations to education					
Intrinsic - Vocational				47	
- Academic				68	
- Personal				47	
Extrinsic - Vocational					46
- Academic					71
- Personal					53
Drifted into higher education					53
Approaches to studying					
Deep		44		42	
Strategic		86			
Surface			83		
Apathetic			45		
Effort put into studying		89			
Time spent on studying		76			
Fear of failure			59		
Negative attitudes				- 45	
Preferences for learning environments					
Deep approach encouraged by					
- lectures which challenge				33	
- open questions in exams			- 34	52	
- courses which allow choice				69	
Surface approach encouraged by					
- lectures which give good notes			38		
- exams linked to lectures			53		
- courses with defined reading			56		

Discussion

Disintegrated Perceptions

This study has indicated the existence among failing students of substantial incoherence between their approaches to studying and their patterns of preference for different kinds of teaching and courses. While the incoherence in responses stands out convincingly from the factor analysis, its meaning is still far from clear. As the disintegration of failing students' perceptions had not been anticipated in designing the present study, it was not possible to explore its meaning further through interviewing failing students.

Examining the factor structure does point up the bizarre connections which the failing students make in their responses to the items. Looking at the individual items, it appears that the failing students who adopt a surface approach are stating, for example, that they prefer examinations which "have questions requiring specific detailed answers" and " can be answered directly from notes", but which also "give an opportunity to show that I've thought about the courses for myself" and "have general questions which provide opportunities to follow a number of different lines". It might be possible to accept failing students disagreeing with all these in a general adverse reaction to all forms of examination, but accepting all of them is uninterpretable from what is currently known.

Analysis of inventory responses still leaves a considerable gap in seeking to interpret the world view of failing students. No hint of this effect has been found in other research, except perhaps in a rather tangential form. In a recent study in New Zealand using the *Approaches to Studying Inventory*, Calder (1989) decided to redistribute items an the basis of an item factor analysis. One of the factors was identified as a 'surface-confused' grouping of items which was associated with students "appearing disorganised, highly anxious, and being unable to concentrate on their studies" (p.269), while others within this group "appeared to be basically deep learners who could not apply that mode of learning appropriately" (p. iii). It could be that he is describing a somewhat similar phenomenon to 'disintegrated' perceptions.

Another tangential finding comes from observations made during interviews with academically weak students in electrical engineering, and suggests a lack of 'connectedness' in their perceptions. A substantial proportion of such students continued to be unduly concerned during their first year in higher education with their home environment and their previous interests (Entwistle *et al.* 1989). They seemed to lack a commitment to their new academic environment, and an associated confusion with their purposes in studying.

The work of Biggs (1985) may also point towards explanations of 'disintegration'. He found that less able secondary school pupils, and also those who made external attributions of their levels of academic performance, failed to produce clear factor structures in his learning processes questionnaire. He speculated that this effect might be attributable to their inability to think metacognitively about their own learning. It may be that 'disintegrated' perceptions are also, in part, a product of such a failure to be aware of the consequences of adopting surface approaches, or of a failure to interpret the implicit messages about assessment requirements which are contained in the 'hidden curriculum' to which students are exposed.

Approaches to studying and preferences for alternative teaching styles

Both studies showed that students who adopted deep or surface approaches to studying also preferred the methods of teaching and assessing which encourage their own particular approaches to learning. In the first study, the one factor among the failing students which was interpretable (Factor III) suggested that students adopting an apathetic, non-strategic approach also gave negative evaluations of the course, being the converse of the positive evaluations given by the successful students adopting deep strategic approaches. Thus, we see not only differences in the types of teaching which would be given a high rating by different students, but also low ratings being given by failing students who have an apathetic approach. It would hardly seem appropriate to give equal weight to these different groups of students in evaluating the effectiveness of a course, and yet that is what is currently done.

Although the present findings come from rather small samples, the findings are in line with several other studies which would support a similar conclusions. For example, Janssen (1992) has carried out factor analyses, separately, of items describing three domains - study strategies, perceptions of examination requirements, and lecturing behaviour. By relating all three analyses to the same theoretical model, interesting correspondences emerge. They suggest parallels between, on the one hand, feeling overloaded and using memorising without understanding, and on the other hand, attributing difficulty in exams to an over demanding course and to bad teaching.

Another indirect indication of this type of interconnection can be seen in an interview study by van Rossum and Taylor (1987). They showed a parallel between students' conceptions of learning (equivalent to the distinction between deep and surface approaches - see Marton & Saljo,1984) and their descriptions of 'good teaching'. As the conception progresses from an emphasis on the reproduction of facts towards the reconstruction of meaning, the definition of good teaching moves from methods which "make things stick" in a painless manner, through clear structure and appropriate emphasis, towards a view of the lecturer as the facilitator of independent learning. Piecing together what students in this latter category said during the interviews produces the following composite quotation (van Rossum & Taylor,1987, pp.14,16,18).

> *'Good teaching' in my opinion stimulates self-activity, i.e. not only knowing dry facts, but awakening curiosity for backgrounds, relationships, etc. ... (It)..involves the students as much as possible in the subject matter... (through) being open to criticism ... and discussing (the topic)... with the students, so that all gain something from it. The teacher is then a guide. ... 'Good teaching' is presenting the subject matter in such a way that those who were already interested remain so, or become more so.*

The change from seeing good teaching in simple procedural terms to recognising its powerful but indirect influence can be seen as a developmental trend equivalent to that found by Perry (1970) in intellectual and ethical development. He showed how students moved away from

> *the simplistic acceptance of facts presented by authority, through a period of confusion about the nature of knowledge and belief, to a recognition that we need to establish a personal philosophy of life which is built out of our own interpretation of relevant*

evidence, but which recognises, and is tolerant of, other people's alternative, even conflicting, interpretations of 'reality' (from a summary of Perry's study by Entwistle & Ramsden, 1983, page11).

The shift observed in the perception of 'good teaching' is of crucial importance, as it involves an important change in beliefs about the causes of learning. In the undeveloped conception of learning and teaching, effective teaching causes learning in a direct way. From this view-point, the student relies on the lecturer's skill to facilitate learning, but in the more developed conception, the responsibility for learning is taken over by the student who looks to the lecturer for intellectual stimulation and guidance.

Conclusions

Given the increasing importance being given to student feedback questionnaires in judging the quality of teaching, it seems crucial to recognise that students with contrasting approaches to learning are likely to define 'good teaching' in quite different ways. The research on student learning has supported a view that 'good teaching' is what encourages thorough conceptual understanding, and yet it is clear from the two studies reported here that the ratings given on feedback questionnaires will be composed of endorsements of quite different items, and so be based on quite different implicit criteria of 'good teaching'. Although some students will rate highly teaching which is intellectually challenging, other students will prefer courses which 'give them the facts'. Students adopting a surface approach will appreciate teaching which directly supports and assesses a narrowly defined set of educational objectives. Inevitably, some students are reluctant to put the amount of intellectual effort into their studying which the deep approach demands, and therefore appreciate teaching which cuts down their work, rather than increases it by challenging them to think for themselves and carry out further reading.

The findings also serve to warn administrators and lecturers against too ready an acceptance of student ratings of teaching in higher education. There is a good argument for analysing separately, at the very least, the responses of students who do well on the course and those who do badly. Does it make sense to adjust the course to suit students whose criteria of 'good teaching' run counter to the educational objectives of the course? But alternatively should we ignore the needs of students who are taking courses for mainly instrumental reasons? Are their intentions not valid? There are some dilemmas here which require further consideration.

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